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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/666,079	09/19/2003	Brent O'Meagher	TRMB1400	8440

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WAGNER, MURABITO & HAO LLP
Third Floor
Two North Market Street
San Jose, CA 95113

EXAMINER	
SHEDRICK, CHARLES TERRELL	
ART UNIT	**PAPER NUMBER**
2617	

DATE MAILED: 05/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/666,079	O'MEAGHER, BRENT	
	Examiner	Art Unit	
	Charles Shedrick	2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 February 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *19 September 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. The Art Unit location of your application in the USPTO has changed. To aid in correlating any papers for this application, all further correspondence regarding this application should be directed to Art Unit 2617.

Response to Arguments

2. Applicant's arguments with respect to claim 1- 30 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims **1-30** are rejected under 35 U.S.C. 103(a) as being unpatentable over Robbins (**U.S. Patent Pub #2002/0198657 A1**) in view of **Friedman (W0 01/50151 A1)**

Consider **claim 1,** Robbins clearly show and disclose a method for delivering Virtual Reference Station data (VRS) data derived by a VRS network processor **105 subsystem (figure 1)** at a VRS control station **105 (figure 1)** for a designated location to a mobile position

determination unit **115 (figure 1)** with a terrestrial communication link, said method comprising: creating a data message comprising pseudorange data derived for said designated location and pseudorange correction for a designated region surrounding said designated location (**paragraph 0054**); sending said data message via a cellular telephone connection from said VRS control station to a base station located in the designated region surrounding said designated location to a mobile position determination unit using a radio transmitter (**paragraphs 0058 and 0064**)(i.e., the distribution system 110 of figure 1 can comprise of delivery media to GSM telephones. GSM networks are well known in the art to consist of base stations, transmitters, etc. Based on the transmission mediums that are inherent in a GSM network the above stated transmitting can be accomplished).

However, Robbins does not specifically teach using a radio transmitter independent of said cellular telephone connection.

In the same field of endeavor, Friedman teaches using a radio transmitter independent of said cellular telephone connection (page 13 lines 18 – 23, page 14 line 24 – page 15 line 5).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was to modify Robbins to include a radio transmitter independent of a cellular phone connection for the purpose of substituting other connection types as taught by Friedman. Friedman also discusses additional reasons for an independent connection on pages 4-7.

Consider **claim 2**, and **as applied to claim 1 above,** Robbins as modified by Friedman teaches a method wherein said VRS control center receives a request for said Virtual Reference Station data and further comprising: deriving the pseudorange data and pseudorange corrections in response to said request (i.e. The declared location of a mobile unit)(**paragraph 0060**).

Consider **claim 3**, and **as applied to claim 2 above,** Robbins as modified by Friedman teaches a method wherein receiving said request from said base station (i.e. using a GSM mobile network as the distribution system it is clear that the request must traverse or originate in some way, shape or form involving a base station. The basic functionality of a BTS is to receive and transmit)(**paragraph 0058 and 0064**).

Consider **claim 4**, and **as applied to claim 3 above**, Robbins as modified by Friedman teaches the method of initiating said request in response to receiving a message (i.e.,varying message types)(**paragraph 0094 and 0095**) from said mobile position determination unit receiving said request from said mobile position determination unit **115** (**figure 1**) (i.e., an integrated GSM phone requests positioning data via the GSM network and DS delivers network correction streams via the GSM DS network)(**paragraph 0060,0061,0062**).

Consider **claim 5**, and **as applied to claim 2 above**, Robbins as modified by Friedman teaches the method of receiving said request from said mobile position determination unit **115** (**figure 1**)(**paragraph 0060**); establishing said cellular telephone connection with base station (i.e., if distributed via a GSM network using a GSM cellular telephone)(**paragraph 0060-0064**); and requesting a position fix of said designated location (i.e., The declared location can be provided from a GPS fix determined by the mobile unit 115 or can be supplied by user input) (**paragraph 0060**).

Consider **claim 6**, and **as applied to claim 1 above**, Robbins as modified by Friedman teaches the method of utilizing a global positioning systems (GPS) receiver to determine a position fix of said designated (i.e., the declared location can be provided from a GPS fix determined by the mobile unit 115 or can be supplied by user input) (**paragraph 0060**).

Consider **claim 7**, and **as applied to claim 6 above**, Robbins as modified by Friedman teaches the method wherein said GPS receiver is disposed in said mobile position determination unit **120** (i.e., a fully integrated mobile receiver as described in **paragraph 0062-0065** and shown in **figures 1 and 18)** and wherein said method further comprises:

locating said mobile position determination unit **115** proximate to said base station (i.e., a mobile unit has a functionality equivalent to having a reference station at the current location of the mobile unit or at the declared location near (proximate) the mobile unit) (**paragraph 0060**).

Utilizing said mobile position determination unit to determine said position fix (**paragraph 0060**).

Consider **claim 8**, and **as applied to claim 6 above**, Robbins as modified by Friedman teaches the method wherein said base station comprises a real-time kinematics (RTK) base station and wherein said method further comprises: communicatively coupling said radio transmitter with a cellular communications device (i.e., using the Trimble Navigation limited products disclosed by Robbins to obtain GPS corrections for RTK, you need your own base station that is no more than ten kilometers from the field you are working in. Trimble Navigation limited further states that for DGPS, you can use your own base station, a correction service provider, or make use of the free radio beacon broadcasts in many regions. Therefore in conjunction with a GSM network system for cellular distribution Robbins clearly describes the method above) (**paragraph 0062-0067**).

Consider **claim 10** and **as applied to claim 1 above** Robbins as modified by Friedman teaches a method wherein said transmitting (i.e., via the Distribution System DS **110**) comprises selecting a frequency from a group of frequency ranges consisting of 150 MHz – 170 MHz and

450 MHz - 470 MHz (i.e., VHF/ UHF support the data transfer rates needed 120 bits per second or better)(**paragraph 0058**).

Consider **claim 11** Robbins clearly show and disclose a system (**figure 1**) for delivering Virtual Reference Station (VRS) data comprising: a VRS control station **105** (**figure 1**) for creating a data message comprising pseudorange data derived for said designated location and pseudorange corrections for a designated region surrounding said designated location (**paragraph 0054**);

a base station located in said designated region surrounding said designated location, said base station for receiving said data message from said VRS control center **105** (**figure 1**) via a cellular telephone (i.e., GSM phone) (**paragraph 0058**) and for transmitting said data message using a radio transmitter (i.e., it is well known that GSM networks are equipped with Base station transceiver BTS with a fundamental duty of receiving and transmitting. The distribution system 110 of figure 1 can comprise of delivery media to GSM telephones. GSM networks are well known in the art to consist of base stations, transmitters, etc.) (**paragraphs 0058 and 0064**);

and a mobile positioning determination unit 115 (figure 1) for receiving said data message from said base station (**paragraphs 0054-0061**).

However, Robbins does not specifically teach using a radio transmitter independent of said cellular telephone connection.

In the same field of endeavor, Friedman teaches using a radio transmitter independent of said cellular telephone connection (page 13 lines 18 – 23, page 14 line 24 – page 15 line 5).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was to modify Robbins to include a radio transmitter independent of a cellular

phone connection for the purpose of substituting other connection types as taught by Friedman. Friedman also discusses additional reasons for an independent connection on pages 4-7.

Consider **claim 12**, and **as applied to claim 11 above,** Robbins as modified by Friedman teaches a system wherein said VRS control center derives the pseudorange data and pseudorange corrections in response to a request for the VRS data (i.e. The declared location of a mobile unit)(**paragraph 0060**).

Consider **claim 13**, and **as applied to claim 12 above,** Robbins as modified by Friedman teaches a system wherein said base station initiates said request (i.e. using a GSM mobile network as the distribution system it is clear that the request must traverse or originate in some way, shape or form involving a base station. It is well known that the basic functionality of a BTS is to receive and transmit)(**paragraph 0058 and 0064**).

Consider **claim 14**, and **as applied to claim 13 above**, Robbins as modified by Friedman teaches a system wherein said base station initiates said request in response to receiving a message (i.e., varying message types)(**paragraph 0094 and 0095**) from said mobile position determination unit **115** (**figure 1**) (i.e., an integrated GSM phone requests positioning data via the GSM network and DS delivers network correction streams via the GSM DS network)(**paragraph 0060,0061,0062**).

Consider **claim 15**, and **as applied to claim 12 above**, Robbins as modified by Friedman teaches a system wherein the VRS Control center **105** (**figure 1**) receiving said request from said mobile position determination unit **115** (**figure 1**)(**paragraph 0060**) and establishing said cellular telephone connection with base station (i.e., if distributed via a GSM network using a

GSM cellular telephone)(**paragraph 0060-0064**); to request a position fix of said designated location (i.e., The declared location can be provided from a GPS fix determined by the mobile unit 115 or can be supplied by user input) (**paragraph 0060**).

Consider **claim 16**, and **as applied to claim 11 above**, Robbins as modified by Friedman teaches a system comprising a global positioning system (GPS) receiver to determine a position fix of said designated (i.e., the declared location can be provided from a GPS fix determined by the mobile unit 115 or can be supplied by user input) (**paragraph 0060**).

Consider **claim 17**, and **as applied to claim 16 above**, Robbins as modified by Friedman teaches a system wherein said GPS receiver is disposed in said mobile position determination unit **120** (i.e., a fully integrated mobile receiver as described in **paragraph 0062-0065** and shown in **figures 1 and 18).**

Consider **claim 18**, and **as applied to claim 16 above**, Robbins as modified by Friedman teaches a system wherein said base station comprises a real-time kinematics (RTK) base station and wherein said radio transmitter is communicatively coupled with a cellular device (i.e., using the Trimble Navigation limited products disclosed by Robbins to obtain GPS corrections for RTK, you need your own base station that is no more than ten kilometers from the field you are working in. Trimble Navigation limited further states that for DGPS, you can use your own base station, a correction service provider, or make use of the free radio beacon broadcasts in many regions. Therefore in conjunction with a GSM network system for cellular distribution Robbins clearly describes the method above) (**paragraph 0062-0067**).

Consider **claim 20** and **as applied to claim 11 above** Robbins as modified by Friedman teaches a system wherein said radio transmitter (i.e., via the Distribution System DS **110**)

transmits said data message at a frequency selected from a group of frequency ranges consisting of 150 MHz – 170 MHz and 450 MHz - 470 MHz (i.e., VHF/ UHF support the data transfer rates needed 120 bits per second or better)(**paragraph 0058**)

Consider **claim 21** Robbins clearly show and disclose a method for delivering Virtual Reference Station data (VRS) data comprising: a plurality of reference stations **105** (i.e., RS1-RSN) (**abstract, paragraph 0049, and figure 1**) to derive pseudorange data for said designated location and pseudorange correction for a designated region surrounding said designated location (**paragraph 0054**); sending a data message comprising pseudorange data and pseudorange corrections to a base station via a cellular telephone network, and wherein said base station is located in said designated region surrounding said designated location(i.e., to obtain GPS corrections for RTK, you need your own base station that is no more than ten kilometers from the field you are working in)(**paragraphs 0058 and 0064**); and transmitting said data message from said base station to a mobile position determination unit located in said designated region surrounding said designated location using a radio transmitter(**paragraphs 0058 and 0064**)(i.e., the distribution system 110 of figure 1 can comprise of delivery media to GSM telephones. GSM networks are well known in the art to consist of base stations, transmitters, etc.)

However, Robbins does not specifically teach using a radio transmitter independent of said cellular telephone connection.

In the same field of endeavor, Friedman teaches using a radio transmitter independent of said cellular telephone connection (**page 13 lines 18 – 23, page 14 line 24 – page 15 line 5**).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was to modify Robbins to include a radio transmitter independent of a cellular

phone connection for the purpose of substituting other connection types as taught by Friedman. Friedman also discusses additional reasons for an independent connection on pages 4-7.

Consider **claim 22**, and **as applied to claim 21 above,** Robbins as modified by Friedman teaches a method wherein said VRS control center receives a request for said Virtual Reference Station data and further comprising: deriving the pseudorange data and pseudorange corrections in response to said request (i.e. The declared location of a mobile unit)(**paragraph 0060**).

Consider **claim 23**, and **as applied to claim 22 above, Robbins** discloses a method wherein receiving said request from said base station (i.e. using a GSM mobile network as the distribution system it is clear that the request must traverse or originate in some way, shape or form involving a base station. The basic functionality of a BTS is to receive and transmit)(**paragraph 0058 and 0064**).

Consider **claim 24**, and **as applied to claim 23 above**, Robbins discloses the method of initiating said request in response to receiving a message (i.e., varying message types)(**paragraph 0094 and 0095**) from said mobile position determination unit receiving said request from said mobile position determination unit **115** (**figure 1**) (i.e., an integrated GSM phone requests positioning data via the GSM network and DS delivers network correction streams via the GSM DS network)(**paragraph 0060,0061,0062**).

Consider **claim 25**, and **as applied to claim 22 above**, Robbins as modified by Friedman teaches the method of receiving said request from said mobile position determination unit **115** (**figure 1**)(**paragraph 0060**); establishing said cellular telephone connection with base station (i.e., if distributed via a GSM network using a GSM cellular telephone)(**paragraph 0060-0064**); and requesting a position fix of said designated location (i.e., The declared location can be

provided from a GPS fix determined by the mobile unit 115 or can be supplied by user input) (**paragraph 0060**).

Consider **claim 26**, and **as applied to claim 21 above**, Robbins as modified by Friedman teaches the method of utilizing a global positioning systems (GPS) receiver to determine a position fix of said designated (i.e., the declared location can be provided from a GPS fix determined by the mobile unit 115 or can be supplied by user input) (**paragraph 0060**).

Consider **claim 27**, and **as applied to claim 26 above**, Robbins as modified by Friedman teaches the method wherein said GPS receiver is disposed in said mobile position determination unit **120** (i.e., a fully integrated mobile receiver as described in **paragraph 0062-0065** and shown in **figures 1 and 18)** and wherein said method further comprises:

locating said mobile position determination unit **115** proximate to said base station (i.e., a mobile unit has a functionality equivalent to having a reference station at the current location of the mobile unit or at the declared location near (proximate) the mobile unit) (**paragraph 0060**).

Utilizing said mobile position determination unit to determine said position fix (**paragraph 0060**).

Consider **claim 28**, and **as applied to claim 26 above**, Robbins as modified by Friedman teaches the method wherein said base station comprises a real-time kinematics (RTK) base station and wherein said method further comprises: communicatively coupling said radio transmitter with a cellular communications device (i.e., using the Trimble Navigation limited products disclosed by Robbins to obtain GPS corrections for RTK, you need your own base station that is no more than ten kilometers from the field you are working in. Trimble Navigation limited further states that for DGPS, you can use your own base station, a correction service

provider, or make use of the free radio beacon broadcasts in many regions. Therefore in conjunction with a GSM network system for cellular distribution Robbins clearly describes the method above) (**paragraph 0062-0067**).

Consider **claim 30** and **as applied to claim 21 above** Robbins as modified by Friedman teaches a method wherein said transmitting (i.e., via the Distribution System DS **110**) comprises selecting a frequency from a group of frequency ranges consisting of 150 MHz – 170 MHz and 450 MHz - 470 MHz (i.e., VHF/ UHF support the data transfer rates needed 120 bits per second or better)(**paragraph 0058**).

Consider **claims 9,19,and 29** and as applied to **claims 8,18,and 28**. Robbins clearly disclose the claimed method and system however, Robbins does not clearly disclose the method and system wherein said radio transmitter comprises a bluetooth communications device.
In the same field of endeavor, Friedman discloses a radio transmitter **54(figure 6) 75** (**figure** 7) comprises a Bluetooth communications device **70** (**figure** 7), and wherein said method further comprises sending a data message to said mobile position determination unit **50** (i.e., mobile DSP)(**figure** 7) using said Bluetooth communication device (**figure** 7).

Therefore it would have been obvious to a person of ordinary skill in the art at the time of the invention to include a bluetooth communication device in a transmitter as taught by Friedman in the method and systems of Robbins for the purpose of improving location determination in areas that are not covered by other wireless means.

Conclusion

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles Shedrick whose telephone number is (571)-272-8621. The examiner can normally be reached on Monday thru Friday 8:00AM-4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kincaid Lester can be reached on (571)-272-7922. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Charles Shedrick
AU 2687
April 26, 2006

NICK CORSARO
PRIMARY EXAMINER